

U.S. Appln. No. 09/676,645
Reply to Office Action dated April 20, 2006

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PATENT
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LISTING OF THE CLAIMS

Please amend the claims as shown below. An identifier indicating the status of each claim is provided.

1. (Currently Amended) A recording apparatus for recording video data to a recording medium, said recording apparatus comprising:

encoding means for encoding the video data in accordance with a compression-encoding process;

converting means for converting a data structure of the encoded video data received from said encoding means into a file structure that allows a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and

recording means for recording the data having said file structure to the recording medium;

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit;

wherein a plurality of first data units and a plurality of second data units are matched with a successive record length,

wherein each second data unit is adjacent to a corresponding first data unit.

wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

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2. (Currently Amended) A recording apparatus for recording audio data to a recording medium, said recording apparatus comprising:

encoding means for encoding the audio data in accordance with a compression-encoding process;

converting means for converting a data structure of audio data or encoded audio data into a file structure that allows a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and

recording means for recording the data having said file structure to the recording medium;

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit;

~~wherein a plurality of second data units are matched with a successive record length,~~

wherein a plurality of first data units and a plurality of second data units are matched with a successive record length.

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

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3. (Currently Amended) A recording apparatus for recording video data and audio data to a recording medium, said recording apparatus comprising:

video encoding means for encoding the video data in accordance with a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames to be structured as a group;

audio output means for outputting the audio data that has been either encoded or not encoded;

multiplexing means for converting a data structure of the encoded video data received from said encoding means and a data structure of the audio data received from said audio output means into respective file structures that allow a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware and for multiplexing the encoded video data and the audio data; and

recording means for recording the multiplexed data to the recording medium;

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit;

~~wherein a plurality of second data units are matched with a successive record length,~~

wherein a plurality of first data units and a plurality of second data units are matched with a successive record length.

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

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wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

4. (Previously Presented) The recording apparatus as set forth in claim 3, wherein in the multiplexed data, a duration of the encoded video data of the second data unit is almost equal to a duration of the audio data of the second data unit.

5. (Original) The recording apparatus as set forth in claim 3, wherein in the multiplexed data, the encoded video data of the second data unit and audio data of the second data unit are alternately arranged, and wherein a plurality of sets of the encoded video data of the second data unit and the audio data of the second data unit are matched with the successive record length.

6. (Previously Presented) The recording apparatus as set forth in claim 2, wherein the audio data is compression-encoded, in accordance with a Adaptive Transform Acoustic Coding method (ATRAC); and wherein the first data unit of the file structure contains one or more sound units.

7. (Previously Presented) The recording apparatus as set forth in claim 1, wherein the file structure further includes a data portion that includes management information, and wherein the data portion describes a number of the second data units contained in the successive record length.

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8. (Previously Presented) The recording apparatus as set forth in claim 3,
wherein the file structure further includes a data portion that includes
management information, and

wherein the data portion describes a flag and a number of sets contained in the
successive record length, the flag representing whether or not sets of encoded video data and
audio data of the second data unit have been recorded in the data portion.

9. (Currently Amended) A recording method for recording video data to a
recording media, said method comprising the steps of:

encoding the video data in accordance with a compression-encoding process;
converting a data structure of the encoded video data received at the encoding
step into a file structure that allows a moving picture to be synchronously reproduced by
computer software without a need to use specially dedicated hardware; and

recording the data having said file structure to the recording medium;
wherein the file structure has a first data unit and a second data unit, the second
data unit being a set of the first data unit; and

~~wherein a plurality of second data units are matched with a successive record
length.~~

matching a plurality of first data units and a plurality of second data units with a
successive record length,

wherein each second data unit is adjacent to a corresponding first data unit,

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wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

10. (Currently Amended) A recording method for recording audio data to a recording medium, said method comprising the steps of:

encoding the audio data in accordance with a compression-encoding process;

converting a data structure of audio data or encoded audio data into a file structure that allows a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and

recording the data having said file structure to the recording medium;

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit; and

~~wherein a plurality of second data units are matched with a successive record length,~~

matching a plurality of first data units and a plurality of second data units with a successive record length,

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

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11. (Currently Amended) A recording method for recording video data and audio data to a recording medium, said method comprising the steps of:

encoding the video data in accordance with a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames to be structured as a group;

outputting audio data that has been compression-encoded or non-compressed either encoded or not encoded;

converting a data structure of the encoded video data received at the encoding step and a data structure of the audio data received at the outputting step into respective file structures that allow a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware;

multiplexing the encoded video data and the audio data; and

recording the multiplexed data to the recording medium;

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit; and

~~wherein a plurality of second data units are matched with a successive record length;~~

matching a plurality of first data units and a plurality of second data units with a successive record length,

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

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wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

12. (Currently Amended) A record medium on which a program for recording video data to a recording medium has been recorded, the program causing a computer to perform the steps of:

encoding the video data in accordance with a compression-encoding process;
converting a data structure of the encoded video data received at the encoding step into a file structure that allows a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and

recording the data having said file structure to the recording medium;
wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit; and

~~wherein a plurality of second data units are matched with a successive record length,~~

matching a plurality of first data units and a plurality of second data units with a successive record length,

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

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13. (Currently Amended) A record medium on which a program for recording audio data to a recording medium has been recorded, the program causing a computer to perform the steps of:

encoding the audio data in accordance with a compression-encoding process;
converting a data structure of audio data or encoded audio data into a file structure that allows a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and

recording the data having said file structure to the recording medium; and
wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit;

~~wherein a plurality of second data units are matched with a successive record length;~~

matching a plurality of first data units and a plurality of second data units with a successive record length,

wherein each second data unit is adjacent to a corresponding first data unit,

wherein a successive record length is a length of data that can be written without a jumping operation; and

wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

14. (Currently Amended) A record medium on which a program for recording video data and audio data to a recording medium has been recorded, the program causing a computer to perform the steps of:

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encoding the video data in accordance with a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensating process that allow a plurality of frames to be structured as a group; outputting audio data that has been either encoded or not encoded; converting a data structure of the encoded video data received at the encoding step and a data structure of the audio data received at the outputting step into respective file structures that allow a moving picture to be synchronously reproduced by computer software without a need to use specially dedicated hardware; and multiplexing the encoded video data and the audio data; and recording the multiplexed data to the recording medium; wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data unit; ~~wherein a plurality of second data units are matched with a successive record length,~~ matching a plurality of first data units and a plurality of second data units with a successive record length, wherein each second data unit is adjacent to a corresponding first data unit, wherein a successive record length is a length of data that can be written without a jumping operation; and wherein a transfer rate of the encoding means is lower than a transfer rate of the data recorded on the recording medium when the data is intermittently read.

15. (Previously Presented) The recording apparatus as set forth in claim 3.

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wherein the audio data is compression-encoded in accordance with a Adaptive
Transform Acoustic Coding method (ATRAC); and

wherein the first data unit of the file structure contains one or more sound units.

16. (Previously Presented) The recording apparatus as set forth in claim 2,
wherein the file structure further includes a data portion that includes
management information, and

wherein the data portion describes a number of the second data units contained in
the successive record length.